# Genome

Contents
Volume 40, 1997

# Génome

Sommaire
Volume 40, 1997

## February / février


**R.-P. Wei, D. Lindgren, and F.C. Yeh** Expected gain and status number following restricted individual and combined-index selection 1

**C.S. Echt and P. May-Marquardt** Survey of microsatellite DNA in pine 9

**M.B. Rogatcheva, P.M. Borodin, S.-I. Oda, and J.B. Searle** Robertsonian chromosomal variation in the house musk shrew (*Suncus murinus*, Insectivora: Soricidae) and the colonization history of the species 18

**B. Vosman and P. Arens** Molecular characterization of GATA/GACA microsatellite repeats in tomato 25

**Yuanfu Ji, Dwaine A. Raska, Thomas D. McKnight, M. Nurul Islam-Faridi, Charles F. Crane, Michael S. Zwick, Robert E. Hanson, H. James Price, and David M. Stelly** Use of meiotic FISH for identification of a new monosome in *Gossypium hirsutum* L. 34

**Guttapadu Sreeramulu and Nagendra K. Singh** Genetic and biochemical characterization of novel low molecular weight glutenin subunits in wheat (*Triticum aestivum* L.) 41

**A.L. Kelly, A.G. Sharpe, J.H. Nixon, E.J. Evans, and D.J. Lydiate** Indistinguishable patterns of recombination resulting from male and female meioses in *Brassica napus* (oilseed rape) 49

**Krishna P. Kollipara, Ram J. Singh, and Theodore Hymowitz** Phylogenetic and genomic relationships in the genus *Glycine* Willd. based on sequences from the ITS region of nuclear rDNA 57

**C. Jiang, M.E. Lewis, and K.C. Sink** Combined RAPD and RFLP molecular linkage map of asparagus 69

**R. Bruskiewich, M. Schertzer, and S. Wood** A 2.8 megabase YAC contig spanning D8S339, which is tightly linked to the Werner syndrome locus 77

**M.D.B. Eldridge and D.J. Pearson** Chromosomal rearrangements in rock wallabies, *Petrogale* (Marsupialia: Macropodidae). IX. Further G-banding studies of the *Petrogale lateralis* complex: *P. lateralis pearsoni*, the West Kimberley race, and a population heterozygous for a centric fusion 84

**A. Fluminhan and T. Kameya** Involvement of knob heterochromatin in mitotic abnormalities in germinating aged seeds of maize 91

**Shunxue Tang, Jiajun Zhuang, Yuxiang Wen, Shanjiang Abydylla Ai, Hongjie Li, and Jia Xu** Identification of introgressed segments conferring disease resistance in a tetrageneric hybrid of *Triticum*, *Secale*, *Thinopyrum*, and *Avena* 99

**J. Provan, G. Corbett, J.W. McNicol, and W. Powell** Chloroplast DNA variability in wild and cultivated rice (*Oryza* spp.) revealed by polymorphic chloroplast simple sequence repeats 104

**Dapeng Bai, J. Brandle, and R. Reeleder** Genetic diversity in North American ginseng (*Panax quinquefolius* L.) grown in Ontario detected by RAPD analysis 111

**S. Mayes, P.L. Jack, D.F. Marshall, and R.H.V. Corley** Construction of a RFLP genetic linkage map for oil palm (*Elaeis guineensis* Jacq.) 116

**Ismael Buño, Carmen López-Fernández, José Luis Díez-Martín, and Jaime Gosálvez** Dynamics of *Sau*3A in situ digestion of human chromosomes analyzed with computerized imaging 123

**Antonio Musio, Tullio Mariani, Carlo Frediani, Cesare Ascoli, and Isabella Sbrana** Atomic force microscope imaging of chromosome structure during G-banding treatments 127

**Irene Konstantopoulou, Elena Drosopoulou, and Zacharias G. Scouras** Variations in the heat-induced protein pattern of several *Drosophila montium* subgroup species (Diptera: Drosophilidae) 132

**Michael S. Zwick, Robert E. Hanson, Thomas D. McKnight, M. Nurul Islam-Faridi, David M. Stelly, Rod A. Wing, and H. James Price** A rapid procedure for the isolation of $C_0t$-1 DNA from plants 138

**A.G. Blinov, Y.V. Sobanov, S.V. Scherbik, and K.G. Aimanova** The *Chironomus* (*Camptochironomus*) *tentans* genome contains two non-LTR retrotransposons 143

**Reg K. Storms, Ying Wang, Natalie Fortin, John Hall, Danh H. Vo, Wu-Wei Zhong, Tom Downing, Arnold B. Barton, David B. Kaback, Yuping Su, and Howard Bussey** Analysis of a 103 kbp cluster homology region from the left end of *Saccharomyces cerevisiae* chromosome I 151

NOTE

**C.M. Challoner and R.H. Gooding** A white eye color mutant in the tsetse fly *Glossina morsitans submorsitans* Newstead (Diptera: Glossinidae) 165

**Instructions to Authors** I-1

**Recommandations aux auteurs** R-1

## April / avril

**J. Schondelmaier, T. Schmidt, J.S. Heslop-Harrison, and C. Jung** Genetic and chromosomal localization of the 5S rDNA locus in sugar beet (*Beta vulgaris* L.) 171

**J.D. Procunier, R.E. Knox, A.M. Bernier, M.A. Gray, and N.K. Howes** DNA markers linked to a *T10* loose smut resistance gene in wheat (*Triticum aestivum* L.) 176

**C.M. Kreike and W.J. Stiekema** Reduced recombination and distorted segregation in a *Solanum tuberosum* (2*x*) × *S. spegazzinii* (2*x*) hybrid 180

**P.K. Subudhi, R.P. Borkakati, S.S. Virmani, and N. Huang** Molecular mapping of a thermosensitive genetic male sterility gene in rice using bulked segregant analysis 188

**R.A. Pickering, A.M. Hill, and R.G. Kynast** Characterization by RFLP analysis and genomic in situ hybridization of a recombinant and a monosomic substitution plant derived from *Hordeum vulgare* L. × *Hordeum bulbosum* L. crosses 195

**Nobuaki Asakura, Chiharu Nakamura, and Ichiro Ohtsuka** RAPD markers linked to the nuclear gene from *Triticum timopheevii* that confers compatibility with *Aegilops squarrosa* cytoplasm on alloplasmic durum wheat 201

**Volker Sievert, Sylvia Kuhn, and Walther Traut** Expression of the sex determining cascade genes *Sex-lethal* and *doublesex* in the phorid fly *Megaselia scalaris* 211

**Bernard R. Baum and L. Grant Bailey** The molecular diversity of the 5S rRNA gene in *Kengyilia alatavica* (Drobov) J.L. Yang, Yen & Baum (Poaceae: Triticeae): potential genomic assignment of different rDNA units 215

**F.G. Biddle, S.A. Eden, J.S. Rossler, and B.A. Eales** Sex and death in the mouse: genetically delayed reproduction and senescence 229

**I.G. Borovkova, Y. Jin, B.J. Steffenson, A. Kilian, T.K. Blake, and A. Kleinhofs** Identification and mapping of a leaf rust resistance gene in barley line Q21861 236

**I. Paran, I. Goldman, and D. Zamir** QTL analysis of morphological traits in a tomato recombinant inbred line population 242

**Robert C. de la Peña, Timothy D. Murray, and Stephen S. Jones** Identification of an RFLP interval containing *Pch2* on chromosome 7AL in wheat 249

**H.M. William, D. Hoisington, R.P. Singh, and D. González-de-León** Detection of quantitative trait loci associated with leaf rust resistance in bread wheat 253

**Ombretta Marescalchi and Valerio Scali** Chromosomal and NOR patterns in the polyclonal stick insect *Bacillus atticus atticus* (Insecta; Phasmatodea) 261

ERRATUM

**C.S. Echt, P. May-Marquardt, M. Hseih, and R. Zahorchak** Erratum: Characterization of microsatellite markers in eastern white pine 271

## June / juin

**T.N.S. Pereira, H. Ilarslan, and R.G. Palmer** Genetic and cytological analyses of three lethal ovule mutants in soybean (*Glycine max*; Leguminosae) 273

**V.C. Blok, M.S. Phillips, and B.E. Harrower** Comparison of British populations of potato cyst nematodes with populations from continental Europe and South America using RAPDs 286

**R. Mayerhofer, V.K. Bansal, M.R. Thiagarajah, G.R. Stringam, and A.G. Good** Molecular mapping of resistance to *Leptosphaeria maculans* in Australian cultivars of *Brassica napus* 294

**C. Lannér, T. Bryngelsson, and M. Gustafsson** Relationships of wild *Brassica* species with chromosome number $2n = 18$, based on RFLP studies 302

**Angeles Cuadrado and Nicolás Jouve** Distribution of highly repeated DNA sequences in species of the genus *Secale* 309

**Frank Merante, Alessandra M.V. Duncan, Grant Mitchell, Catherine Duff, Joanna Rommens, and Brian H. Robinson** Chromosomal localization of the human liver form cytochrome *c* oxidase subunit VIIa gene 318

**Frank Merante, Mingfu Ling, Alessandra M.V. Duncan, Catherine Duff, and Brian H. Robinson** Cloning, characterization, and chromosomal localization of human liver form cytochrome *c* oxidase subunit VIa related genes 325

**H. Pakniyat, W. Powell, E. Baird, L.L. Handley, D. Robinson, C.M. Scrimgeour, E. Nevo, C.A. Hackett, P.D.S. Caligari, and B.P. Forster** AFLP variation in wild barley (*Hordeum spontaneum* C. Koch) with reference to salt tolerance and associated ecogeography 332

**Kathleen A. Hill and Shiva M. Singh** The evolution of species-type specificity in the global DNA sequence organization of mitochondrial genomes 342

**Andreas Polley, Elisabeth Seigner, and Martin W. Ganal** Identification of sex in hop (*Humulus lupulus*) using molecular markers 357

**J. Lima-Brito, H. Guedes-Pinto, G.E. Harrison, and J.S. Heslop-Harrison** Molecular cytogenetic analysis of durum wheat × tritordeum hybrids 362

**Johnson O. Olufowote, Yunbi Xu, Xiuli Chen, William D. Park, Henry M. Beachell, Robert H. Dilday, Mak Goto, and Susan R. McCouch** Comparative evaluation of within-cultivar variation of rice (*Oryza sativa* L.) using microsatellite and RFLP markers 370

**Klaus Werner Wolf** Fine structure of the kinetochores in six species of the Coleoptera 379

**Shahryar F. Kianian, Bai-Chai Wu, Stephen L. Fox, Howard W. Rines, and Ronald L. Phillips** Aneuploid marker assignment in hexaploid oat with the C genome as a reference for determining remnant homoeology 386

**Ximing Guo and Standish K. Allen, Jr.** Sex and meiosis in autotetraploid Pacific oyster, *Crassostrea gigas* (Thunberg) 397

**H.M. Thomas, J.A. Harper, M.R. Meredith, W.G. Morgan, and I.P. King** Physical mapping of ribosomal DNA sites in *Festuca arundinacea* and related species by in situ hybridization 406

## August / août

**Antonella Pfeiffer, Angelo M. Olivieri, and Michele Morgante** Identification and characterization of microsatellites in Norway spruce (*Picea abies* K.) 411

**L. Fredrick Marek and R.C. Shoemaker** BAC contig development by fingerprint analysis in soybean 420

**P. Besse, C.L. McIntyre, D.M. Burner, and C.G. de Almeida** Using genomic slot blot hybridization to assess intergeneric *Saccharum* × *Erianthus* hybrids (Andropogoneae – Saccharinae) 428

**R.L. Jarret, L.C. Merrick, T. Holms, J. Evans, and M.K. Aradhya** Simple sequence repeats in watermelon (*Citrullus lanatus* (Thunb.) Matsum. & Nakai) 433

**Joanne Russell, John Fuller, George Young, Bill Thomas, Graziana Taramino, Malcolm Macaulay, Robbie Waugh, and Wayne Powell** Discriminating between barley genotypes using microsatellite markers 442

**E. Alvarez, C. Alonso-Blanco, R. García Suárez, J.J. Ferreira, A. Roca, and R. Giraldez** A strategy for detecting chromosome-specific rearrangements in rye 451

**Sergei I. Agulnik, Ilya Ruvinsky, and Lee M. Silver** Three novel *T*-box genes in *Caenorhabditis elegans* 458

**S. Rahman, S. Abrahams, D. Abbott, Y. Mukai, M. Samuel, M. Morell, and R. Appels** A complex arrangement of genes at a starch branching enzyme I locus in the D-genome donor of wheat 465

**Martha I. Gómez, M. Nurul Islam-Faridi, Sung-Sick Woo, Keith F. Schertz, Don Czeschin, Jr., Michael S. Zwick, Rod A. Wing, David M. Stelly, and H. James Price** FISH of a maize *sh2*-selected sorghum BAC to chromosomes of *Sorghum bicolor* 475

**S. Bekal, J.P. Gauthier, and R. Rivoal** Genetic diversity among a complex of cereal cyst nematodes inferred from RFLP analysis of the ribosomal internal transcribed spacer region 479

**M. Parani, M. Lakshmi, S. Elango, Nivedita Ram, C.S. Anuratha, and Ajay Parida** Molecular phylogeny of mangroves II. Intra- and inter-specific variation in *Avicennia* revealed by RAPD and RFLP markers 487

**I.A.P. Parkin and D.J. Lydiate** Conserved patterns of chromosome pairing and recombination in *Brassica napus* crosses 496

**Jorge Dubcovsky, A.R. Schlatter, and M. Echaide** Genome analysis of South American *Elymus* (Triticeae) and *Leymus* (Triticeae) species based on variation in repeated nucleotide sequences 505

**P. Donini, M.L. Elias, S.M. Bougourd, and R.M.D. Koebner** AFLP fingerprinting reveals pattern differences between template DNA extracted from different plant organs 521

**Thomas Kraft, Birgitta Fridlund, Annika Hjerdin, Torbjörn Säll, Stig Tuvesson, and Christer Halldén** Estimating genetic variation in sugar beets and wild beets using pools of individuals 527

**Qinyin Cai and Kenneth B. Storey** A novel RNA species from the turtle mitochondrial genome: induction and regulation of transcription and processing under anoxic and freezing stresses 534

**Yonghe Bai, T.E. Michaels, and K.P. Pauls** Identification of RAPD markers linked to common bacterial blight resistance genes in *Phaseolus vulgaris* L. 544

**Julian Thomas, Qin Chen, and Neil Howes** Chromosome doubling of haploids of common wheat with caffeine 552

**Peter S. Nielsen, Andris Kleinhofs, and Odd-Arne Olsen** Barley elongation factor 1α: genomic organization, DNA sequence, and phylogenetic implications 559

**Adam J. Lukaszewski** Construction of midget chromosomes in wheat 566

**Qing A. Yao, Ecaterina Simion, Manilal William, Joan Krochko, and Ken J. Kasha** Biolistic transformation of haploid isolated microspores of barley (*Hordeum vulgare* L.) 570

NOTE

**R.J. Snowdon, W. Köhler, and A. Köhler** Chromosomal localization and characterization of rDNA loci in the *Brassica* A and C genomes **582**

## October \ octobre

**C. Pedersen and P. Langridge** Identification of the entire chromosome complement of bread wheat by two-colour FISH **589**

**Andrew S. Peek, Paul A. Wheeler, Carl O. Ostberg, and Gary H. Thorgaard** A minichromosome carrying a pigmentation gene and brook trout DNA sequences in transgenic rainbow trout **594**

**Ines Swoboda and Prem L. Bhalla** RAPD analysis of genetic variation in the Australian fan flower, *Scaevola* **600**

**Enrico Noli, Silvio Salvi, and Roberto Tuberosa** Comparative analysis of genetic relationships in barley based on RFLP and RAPD markers **607**

**Stephen R. Pearce, Gill Harrison, Pat (J.S.) Heslop-Harrison, Andrew J. Flavell, and Amar Kumar** Characterization and genomic organization of Ty1-*copia* group retrotransposons in rye (*Secale cereale*) **617**

**L.S. Dahleen, D.L. Hoffman, J. Dohrmann, R. Gruber, and J. Franckowiak** Use of a subset of doubled-haploid lines for RAPD interval mapping in barley **626**

**Jai-Heon Lee, K. Arumuganathan, Y. Yen, S. Kaeppler, H. Kaeppler, and P.S. Baenziger** Root tip cell cycle synchronization and metaphase-chromosome isolation suitable for flow sorting in common wheat (*Triticum aestivum* L.) **633**

**Qing A. Yao and Ken J. Kasha** Potential of biolistic transformation of barley microspores based on viability and transient β-glucuronidase activity **639**

**N.-O. Nilsson, C. Halldén, M. Hansen, A. Hjerdin, and T. Säll** Comparing the distribution of RAPD and RFLP markers in a high density linkage map of sugar beet **644**

**Silvan A. Kamstra, Anja G.J. Kuipers, Marjo J. De Jeu, M.S. Ramanna, and Evert Jacobsen** Physical localisation of repetitive DNA sequences in *Alstroemeria*: karyotyping of two species with species-specific and ribosomal DNA **652**

**Evans S. Lagudah, Odile Moullet, and Rudi Appels** Map-based cloning of a gene sequence encoding a nucleotide-binding domain and a leucine-rich region at the *Cre3* nematode resistance locus of wheat **659**

**F. Garriga-Calderé, D.J. Huigen, F. Filotico, E. Jacobsen, and M.S. Ramanna** Identification of alien chromosomes through GISH and RFLP analysis and the potential for establishing potato lines with monosomic additions of tomato chromosomes **666**

**Tamzin M. Donald, Andreas Houben, Carolyn R. Leach, and Jeremy N. Timmis** Ribosomal RNA genes specific to the B chromosomes in *Brachycome dichromosomatica* are not transcribed in leaf tissue **674**

**A.L. del Cerro and J.L. Santos** Chiasma redistribution in the presence of different sized supernumerary segments in a grasshopper: dependence on nonhomologous synapsis **682**

**A. Fominaya, S. Molnar, N.-S. Kim, Q. Chen, G. Fedak, and K.C. Armstrong** Characterization of *Thinopyrum distichum* chromosomes using double fluorescence in situ hybridization, RFLP analysis of 5S and 26S rRNA, and C-banding of parents and addition lines **689**

**Zhanao Deng, Shu Huang, Shunyuan Xiao, and Frederick G. Gmitter, Jr.** Development and characterization of SCAR markers linked to the citrus tristeza virus resistance gene from *Poncirus trifoliata* **697**

**Charles P. Scutt, Yasuko Kamisugi, Fukumi Sakai, and Philip M. Gilmartin** Laser isolation of plant sex chromosomes: studies on the DNA composition of the X and Y sex chromosomes of *Silene latifolia* **705**

**M.G. Francki, O.R. Crasta, H.C. Sharma, H.W. Ohm, and J.M. Anderson** Structural organization of an alien *Thinopyrum intermedium* group 7 chromosome in U.S. soft red winter wheat (*Triticum aestivum* L.) **716**

**Lidia Poggio, Marcela Rosato, and Carlos A. Naranjo** Meiotic behavior and DNA content in alloplasmic lines of maize **723**

**Malika L. Ainouche and Randall J. Bayer** On the origins of the tetraploid *Bromus* species (section *Bromus*, Poaceae): insights from internal transcribed spacer sequences of nuclear ribosomal DNA **730**

**K.J. Hall, J.S. Parker, and T.H.N. Ellis** The relationship between genetic and cytogenetic maps of pea. I. Standard and translocation karyotypes **744**

**K.J. Hall, J.S. Parker, T.H.N. Ellis, L. Turner, M.R. Knox, J.M.I. Hofer, J. Lu, C. Ferrandiz, P.J. Hunter, J.D. Taylor, and K. Baird** The relationship between genetic and cytogenetic maps of pea. II. Physical maps of linkage mapping populations **755**

**P.B. Moens, J.A.M. Heddle, B. Spyropoulos, and H.H.Q. Heng** Identical megabase transgenes on mouse chromosomes 3 and 4 do not promote ectopic pairing or synapsis at meiosis **770**

**Daniela Ester Cardone, Isidoro Feliciello, Marcello Marotta, Claudia Rosati, and Gianni Chinali** A family of centromeric satellite DNAs from the European brown frog *Rana graeca italica* **774**

NOTE

**S.A. Jackson, B. Friebe, B.S. Gill, and J. Jiang** Structure of the rye midget chromosome analyzed by FISH and C-banding **782**

## December / décembre

REVIEW / SYNTHÈSE

**Greg M. Arndt and Gerry H. Rank** Colocalization of antisense RNAs and ribozymes with their target mRNAs **785**

ARTICLES

**R.V. Kowles, G.L. Yerk, K.M. Haas, and R.L. Phillips** Maternal effects influencing DNA endoreduplication in developing endosperm of *Zea mays* **798**

**Gen-Lou Sun, Björn Salomon, and Roland von Bothmer** Analysis of tetraploid *Elymus* species using wheat microsatellite markers and RAPD markers **806**

**Michael Pillay** Variation of nuclear ribosomal RNA genes in *Eragrostis tef* (Zucc.) Trotter **815**

**F. Pupilli, M.E. Caceres, C.L. Quarin, and S. Arcioni** Segregation analysis of RFLP markers reveals a tetrasomic inheritance in apomictic *Paspalum simplex* **822**

**P.M. Borodin, M.B. Rogatcheva, K. Koyasu, K. Fukuta, K. Mekada, and S.I. Oda** Pattern of X–Y chromosome pairing in the Japanese field vole, *Microtus montebelli* **829**

**John F. Leslie and Carl T. Yamashiro** Effects of the *tol* mutation on allelic interactions at *het* loci in *Neurospora crassa* **834**

**D.Q. Fang, C.T. Federici, and M.L. Roose** Development of molecular markers linked to a gene controlling fruit acidity in citrus **841**

**Timothy F. Sharbel, Laas P. Pijnacker, and Leo W. Beukeboom** Multiple supernumerary chromosomes in the pseudogamous parthenogenetic flatworm *Polycelis nigra*: lineage markers or remnants of genetic leakage? **850**

**G.G. Vendramin and B. Ziegenhagen** Characterisation and inheritance of polymorphic plastid microsatellites in *Abies* **857**

**Régis Zimmer, Alon Haberfeld, and Ann M. Verrinder Gibbins** Microisolation of the chicken Z chromosome and construction of microclone libraries **865**

**P.S. Ronald, G.A. Penner, P.D. Brown, and A. Brûlé-Babel** Identification of RAPD markers for percent hull in oat **873**

**Francis W.J. Havekes, J. Hans de Jong, and Christa Heyting** Comparative analysis of female and male meiosis in three meiotic mutants of tomato **879**

**Noa Diwan, Arvind A. Bhagwat, Gary B. Bauchan, and Perry B. Cregan** Simple sequence repeat DNA markers in alfalfa and perennial and annual *Medicago* species **887**

**Michael Kleine, Wolfgang Michalek, Thomas Diefenthal, Harald Dargatz, and Christian Jung** Construction of a *Mlu*I-YAC library from barley (*Hordeum vulgare* L.) and analysis of YAC insert terminal regions **896**

**Juliane Ramser, Kurt Weising, Cristina Lopez-Peralta, Werner Terhalle, Ryohei Terauchi, and Günter Kahl** Molecular marker based taxonomy and phylogeny of Guinea yam (*Dioscorea rotundata – D. cayenensis*) **903**

**Jaime Castro, Stefania De Lucchini, Irma Nardi, Laura Sánchez, and Paulino Martínez** Molecular analysis of a NOR site polymorphism in brown trout (*Salmo trutta*): organization of rDNA intergenic spacers **916**

**H. Witsenboer, J. Vogel, and R.W. Michelmore** Identification, genetic localization, and allelic diversity of selectively amplified microsatellite polymorphic loci in lettuce and wild relatives (*Lactuca* spp.) **923**

**H.I.T. Khawaja, J. Sybenga, and J.R. Ellis** Chromosome pairing and chiasma formation in autopolyploids of different *Lathyrus* species **937**

**L. Sola, M. Marzovillo, A.R. Rossi, E. Gornung, S. Bressanello, and B.J. Turner** Cytogenetic analysis of a self-fertilizing fish, *Rivulus marmoratus*: remarkable chromosomal constancy over a vast geographic range **945**

**Note of appreciation / Note de reconnaissance** **iii**

**Author index for volume 40 / Index des auteurs pour le volume 40** **AI-1**

**Contents for volume 40 / Sommaire pour le volume 40** **C-1**